

What Is Claimed Is:

1. A device for ascertaining the charge (Q_e) able to be drawn from an energy store, in particular a battery, up to a specified cutoff, characterized by
 - a charge predictor (2), which in the case of a specified discharge current characteristic ($I_{Batt,ent1}$) calculates the charge (Q_e) able to be drawn from the energy store on the basis of a mathematical energy store model, which mathematically represents the electrical properties of the energy store, and
 - a state variable and parameter estimator (1), which ascertains state variables (Z) and/or parameters (P) for the mathematical energy store model from current performance quantities ($U_{Batt}, I_{Batt}, T_{Batt}$).
2. The device as recited in Claim 1, wherein the energy store model is a battery model, which includes at least a mathematical model for the internal resistance (R_i), an acid diffusion resistance (R_k) and a charge transfer polarization (U_D).
3. The device as recited in Claim 1 or 2, wherein as state variables (Z) the state variable and parameter estimator (1) ascertains at least an open-circuit voltage (U_{c0}) and a concentration polarization (U_k).
4. The device as recited in Claim 3, wherein the state variable and parameter estimator (1) additionally ascertains a charge transfer polarization (U_D).
5. The device as recited in one of the preceding claims wherein the charge predictor (2) ascertains the charge (Q_e) able to be drawn until a specified minimum

- electrolyte voltage (U_{emin}) is reached that represents a first cutoff criterion.
6. The device as recited in one of the preceding claims, wherein the charge predictor (2) ascertains the charge (Q_e) able to be drawn until a minimum voltage (U_{Battmin}) of the energy store is reached that represents a second cutoff criterion.
 7. The device as recited in one of the preceding claims wherein the charge predictor (2) ascertains the charge (Q_e) able to be drawn until a specified minimum capacity (U_{Lastmin}) is reached that represents a third cutoff criterion.
 8. The device as recited in one of the preceding claims wherein a voltage predictor is provided for which a load current characteristic (I_{Last}) is specifiable and which as a function of the load current (I_{Last}) ascertains a corresponding load voltage (U_{Last}), which would set in on the basis of the specified load current characteristic (I_{Last}).
 9. A method for ascertaining the charge (Q_e) able to be drawn from an energy store, in particular a battery, up to a specified cutoff, characterized by the following steps:
 - calculating the charge (Q_e) able to be drawn, in the case of a specified discharge current characteristic ($I_{\text{Batt,Entlade}}$), from the energy store with the aid of a charge predictor (2) on the basis of a mathematical energy store model, which mathematically represents the electrical properties of the energy store, and
 - ascertaining state variables (Z) and/or parameters (P) for the mathematical energy store model from

current performance quantities ($U_{\text{Batt}}, I_{\text{Batt}}, T_{\text{Batt}}$) of the energy store with the aid of a state variable and parameter estimator (1).

10. The method as recited in Claim 9, wherein the charge predictor (2) calculates a charge (Q_e) able to be drawn until reaching a specified minimum capacity (U_{Lastmin}), a load voltage (U_{Last}) being taken into account, which is supplied to the charge predictor (2) by a voltage predictor (1) which ascertains the load voltage (U_{Last}) as a function of a specified load current characteristic (I_{Last}).